Virtual Person Perception: What Does Your Personal Computer Desktop Say About You?

Research Thesis

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Ross Boley

The Ohio State University

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Project Advisor: Professor Bradley M. Okdie, Department of Psychology

Abstract

People provide insight into their personality through the physical and digital environments they inhabit. To what extent are these personality cues perceivable through more restricted digital environments? The current study examined whether one's personality can be perceived by others using only cues on personal computer desktops. In Phase 1, participants agreed to have a photo taken of their personal computer desktop and subsequently took a series of general (e.g., Big 5 personality traits) and specific (e.g., Narcissism) personality measures. In Phase 2, the personal computer desktop photos in Phase 1 were presented to trained coders who attempted to perceive the personality of each desktop owner. Demonstrating digital personality perception, I hypothesized significant positive correlations between participants' self-reported personality ratings and the personality ratings of the coders (i.e., self-other overlap) on global personality traits (e.g., openness, consciousness, and extraversion). Results revealed coders were not able to accurately perceive personality from personal computer desktop cues as there were no significant correlations between the participants' and coders' personality ratings. These data suggest personal computer desktops may be a boundary condition; personal computer desktops may not possess enough personality cues for the owner's personality to be accurately perceived.

Introduction

People leave cues (i.e., information that is a proxy for one's personality) of their daily activity in their physical spaces. Sometimes these cues are purposeful and other times they are a byproduct of existing in that space. These cues are manifestations of one's personality and can be accurately perceived by others (Gosling, Ko, Mannarelli & Morris, 2002). That is, objective observers can accurately judge one's personality from the physical spaces they inhabit (Gosling, et al., 2002). However, people now inhabit digital spaces too. Emerging research indicates that people may also leave cues of their personality in their digital spaces (e.g., personal websites), similarly to the manner in which personality is manifested in physical spaces (Vazire, & Gosling, 2004). The current study examined if people can accurately infer one's personality from the digital cues left on their personal computer desktop.

Person Perception

People can successfully perceive personality from thin slices of behavior (brief exposure to a person's behavior; Ambady et al., 2000). Early person perception research indicates that specific behaviors within these thin slices demonstrate specific personality traits (Bem & Funder, 1978; McCrae, Costa, & Busch, 1986; McCrory, Bernieri, Grahe, & Gada-Jain, 2003). This research demonstrates that person perception requires that cues exist and be predictive of the personality of those from whom they were generated (Funder, 1995; Brunswik, 1956). Moreover, to use these cues in judgment, observers must select cues with meaning while ignoring those that convey little personality information (Brunswik, 1956; Funder's 1995, 1999, Realistic Accuracy Model; RAM). Equally important, observers must agree on the meaning of selected cues, making a successful association between the cues and personality traits, and relate associated behaviors

to those traits (Funder, 1995; Brunswik, 1956; see Kenny's 1994 Weighted-Average Model; WAM).

Research suggests that observers are able to choose valid cues and associate them with the appropriate personality traits (Funder & Sneed, 1993). For example, videotaped participants engaged in structured activities designed to maximize the detection of a certain behaviors relevant to a certain personality trait (McLarney-Vesotski, Bernieri, & Rempala, 2006). Observers detected the enhanced behavior the study was designed to augment and were able to associate it with the correct personality trait with the correctly associated cues (McLarney-Vesotski, Bernieri, & Rempala, 2006). These data also indicate that trait judgment agreement is dependent on what trait is salient to the observer (McLarney-Vesotski, Bernieri, & Rempala, 2006). The successful judging of personality when viewing one's behavior is not surprising given the number of available cues and visual nature of the observation. It is clear that person perception through behavior is possible when cues are abundant.

In summary, people give off cues, those cues are associated with particular traits, and people seem to know what cues are most diagnostic of one's personality. Observers in zero-acquaintance studies (i.e., an indirect observation of a stranger) are able to perceive their partners personality with some degree of correctness (Ambady & Rosenthal, 1992; Blackman & Funder, 1998; Borkenau & Liebler, 1992; Chaplin, Philips, Brown, Clanton, & Stein, 2000; Paulhus & Bruce, 1992). What's more, observers' similar personality judgements correspond to the actual personality of the individual they are judging. This is significant because it demonstrates personality is perceivable in zero-acquaintance settings. So, while we know observers can perceive personality in zero-acquaintance settings that yield a narrow view of the individual

(observing an individual via video recording or photograph), does person perception extend beyond thin slice scenarios to environments in which the target of perception is absent?

Perceiving Personality from Physical Spaces

The same perceivable physical behaviors that provide cues to one's personality also impact their environment, creating a physical space that serves a proxy for their personality. The mechanisms that lead to correct person perception when the target is present are also likely to be responsible for person perception that occurs in people's physical spaces when they are absent. That is, observers still need to locate valid cues and associate those cues with their corresponding personality traits but, instead of cues being perceived firsthand from the target's behavior, they are perceived secondhand from the person's effect on their environment. Although the environment may change the quality and quantity of the cues, the person's perception processes of the cues stay consistent. Research examining person perception through one's physical spaces has shown that personality can be accurately perceived by observers in the absence of the target (e.g., just by viewing a person's office or dorm room; Gosling, 2008; Gosling, Ko, Mannarelli, & Morris, 2002). Person perception occurring when the target absent is similar to person perception occurring with the target present; however, the ways in which these cues are conveyed to the observer in physical environments is different.

One's physical space is populated plentifully by one's personal belongings which act as social cues for insight into their personality (Gosling, 2008). Brunswik's (1956) lens model explains person perception in the context of physical environments. It posits that the objects (i.e., cues) in our personal environments act as a lens for observers to view the hidden constructs (e.g., personality traits) of the owner. Personality perception through environmental cues can be broken into two parts: cue utilization and cue validity (Brunswik, 1956). Cue utilization is

creating judgments from the observable cues while cue validity is the extent to which the available cues are related to the true hidden construct underlying the cue (Brunswik, 1956). Brunswik's lens model provides a framework from which one can understand person perception in physical spaces (e.g., cues must be available to observe and the observer must make an association between cues and traits). Others have explained the process of person perception in physical spaces differently.

Some research conceptualizes that people leave cues in their physical spaces either as behavioral residue or identity claims (Gosling, 2008). Behavioral residue is an unintentional byproduct of one's activity when natural behavior is manifested into physical cues in an environment (Gosling et al., 2002). Behavioral residue can further be broken down into interior behavioral residue (one's physical cues of activity from inside their physical space) and exterior behavioral residue (one's physical cues of activity from outside their physical space; Gosling, Ko, Mannarelli, & Morris, 2002). For example, a pair of dirty soccer cleats might act as exterior behavioral residue. The soccer cleats are the behavioral residue one throws off right at the front door before getting into a hot shower after coming back from a long soccer game (Gosling, 2008). This act is conducted outside the immediate environment, unintentional, yet the soccer cleats signify one is an avid soccer player. Alternatively, household sandwich supplies might be thought of as interior behavioral residue. Once one returns from the soccer game, they may feel hungry and make a sandwich and leave out the sandwich supplies. This act is conducted inside the environment, unintentional, and signifies one is hungry.

In contrast to unintentional cues left in the physical environment, people also intentionally place cues to their personality throughout their physical spaces. Intentional cues of self-expression are called identity claims (Gosling, 2008). Similar to behavioral residue, identity

claims can be further broken down into self-directed identity claims (intentional self-expressions to reinforce one's self) and other-directed identity claims (intentional self-expressions of oneself intended for others to see; Gosling, Ko, Mannarelli, & Morris, 2002). For example, a family portrait facing oneself in one's office space might act as a self-directed identity claim. The family portrait is an identity claim one intentionally displays to reinforce one's self love of their family. Separately, a college diploma in one's office space might act as an other-directed identity claim. The college diploma is an identity claim one intentionally displays for visiting guests to see. Brunswick's (1956) research further breaks down behavioral residue and identity claims.

Behavioral residue and identity claims can be viewed through Brunswik's (1956) lens model. Just as targets present cues that indicate underlying constructs of their personality (cue validity), so too do target absent cues such as one's behavioral residue and identity claims (Gosling, Ko, Mannarelli, & Morris, 2002). Observers of others' personal space must also make use of the valid cues in the physical environment (cue utilization). That is, an observer needs to infer behavior from residue (or identity claims) and connect that behavior to the disposition of the target (Gosling, Ko, Mannarelli, & Morris, 2002).

Person perception using behavioral residue and identity claims in physical spaces has been demonstrated in office and bedroom spaces. Initially, observers were instructed to examine and rate participants' personal workspaces and bedrooms (cubicles or dorm rooms; Gosling, Ko, Mannarelli, & Morris, 2002). Several teams of coders coded the items in the physical space into one of forty-three environmental feature categories (Gosling, Ko, Mannarelli, & Morris 2002). The owners of the spaces rated their personality along with informants who added validity to the owner's self-assessments (Gosling, Ko, Mannarelli, & Morris 2002). The study found coders were able to accurately judge participants' personalities by using the correct cues (i.e., one's that

reflected the coded and self-reported personalities of the participants) in their office spaces and personal living spaces (Gosling, Ko, Mannarelli, & Morris, 2002). In summary, just as when the target is present, it seems that people can select valid cues from a target's environment and correctly perceive their personality—even when they are not present in that environment.

Although we know behavioral residue and identity claims are present within our physical spaces, we do not know if these same qualities of cues are present in digital spaces where the availability of personality cues are likely not as plentiful. While the person perception processes remain consistent (i.e., cues must be available to observer, observer must make an association between cues and trait, etc.), the context (e.g., a digital space) and quality and quantity of cues (e.g., behavioral residue & identity claims) conveyed to the observer change. The shift from physical to digital environment likely changes the availability and type of behavioral residue and identity claims. People may continue to leave behind behavioral residue and identity claims in digital environments, but in a dissimilar fashion. One may be able to adorn their house with family portraits but is confined to selecting one photo on their personal computer desktop. Moving from perceiving personality in physical spaces to perceiving personality in digital spaces may affect the quantity and quality of cues that are communicated; that is, certain types of digital contexts (such as computer desktops) may restrict how personality can be conveyed.

Perceiving Personality from Digital Spaces

People are spending increasing amounts of time in digital environments (Okdie, Guadagno, Bernieri, Geers, & Mclarney-Vesotski, 2011) and their behavior, while in digital environments, likely leaves traces to their personality behind. In part, this is evidenced by data indicating that online behavior is similar to that of offline behavior (Back et al., 2010). This is likely true for any digital environment in which people are highly invested, spend considerable

time, and are able to customize. One digital space that satisfies these criteria are personal web sites. People use personal websites to convey their personality (Vazire & Gosling, 2004). Internet websites are contexts especially rich in identity claims because they have considerably more potential for conscious thought when it comes to design complexity (i.e., personal websites offer a greater depth for customization; Vazire & Gosling, 2004). Personal websites are meant to be viewed by others (e.g., other-directed identity claims); they are constructed with the idea that they are to be searched thoroughly (Vazire & Gosling, 2004). While person perception processes remain constant, digital environments are qualitatively different than physical spaces, the context and system in which behavioral residue (i.e., a person's search history) is left and identity claims (i.e., posting wedding photos) are made is qualitatively different (Okdie, Guadagno, Bernieri, Geers, & Mclarney-Vesotski, 2011). One study recruited participants who owned internet websites, took a screenshot of their current websites, and had them report their personality (Vazire & Gosling, 2004). Observers rated the screenshots and were able to accurately predict the participants' personalities from viewing the identity claims on their websites (Vazire & Gosling, 2004). Given that personality can be gleaned from personal websites which are more static than social media activity, it is plausible that personality can also be perceived by one's social media activity.

A more recent highly customizable digital domain in which people are personally invested is social media (e.g., Facebook profiles, chat rooms; Back et al., 2010). Perception via social media web sites is likely possible because people customize their Facebook profiles to mirror their identity, achievements, relationships, and current events in their lives. Online social networking sites have become popular social platforms (Back et al., 2010). Using online social

networking sites, individuals can provide the same personal information that exists in personal environments (e.g., attitudes and social behavior; Back et al., 2010).

In fact, people use online social networking sites to convey their authentic personality (extended real-life hypothesis) and continue to be socially adept online if they were in real life too (Walther, 2008; Valkenburg & Peter, 2007). One study obtained self-reports and ideal-self reports of personality from participants. Observers then rated screenshots of the participants' online social networking site profiles. Results supported the extended real-life hypothesis in that observer ratings significantly correlated with participants' self-reported personality demonstrating observers could detect the participants' personality because it was their true personality. Conversely, observer ratings did not correlate with participants ideal self-reports suggesting that online social networking sites convey one's authentic personality (Back et al., 2010). Another study looked at the correlation between one's personality and their Facebook usage (Study 1) and the observable information on their Facebook profiles (Study 2). In study 1, participants reported their personality and Facebook-related behaviors. In study 2, participants completed a self-report of their personality and then had four informants (e.g., people familiar with the target) rated their personality. Next, participants' Facebook profiles were captured (i.e., their profile page and a few of their photos) and coders categorized eight types of information on the Facebook profiles. Observers rated participants' Facebook profile screenshots. Results of the study indicated an association between participants' self-reported personality and their Facebook usage (study 1) and information of Facebook profiles (Study 2; Gosling, 2011). This supported the rich-get-richer hypothesis and (study 2) indicated that people can accurately perceive one's personality from their Facebook profile.

In sum, research indicates people interact more online, and when they do, they leave cues of themselves behind, much like they do in the real world. Moreover, much like in physical spaces, people are able to use these digital cues to accurately assess another's personality. However, in digital contexts, there is a difference in the quality and quantity of cues that are communicated. It is important to investigate the implications of new digital environments on their cues and their detection. Furthermore, it is key to explore if there is a boundary condition to person perception on digital environments. To my knowledge, no research has examined personality expression from personal computer desktops. Because individuals spend considerable time on their computers, they are likely to leave digitals cues to their personality behind on their computer desktops. However, the amount and quality of these cues are likely to be reduced because the behavior that one can engage in on a computer desktop is limited.

The Current Study

Perceiving personality from ones' computer desktop may be difficult because it is a more restrictive digital space. However, individuals are still likely to leave cues to their personality on their computer desktop screens. For example, files and folder orientations on one's desktop act as behavioral residue for the owner. These files (e.g., their names, extensions, logo art) and orientation of folders are a byproduct of the computer desktop owner's daily activity. Moreover, non-default desktop backgrounds can be considered identity claims as they are purposeful and likely indicative of the desktop owners' personality. That is, by changing their desktop background, the owner is making a claim about themselves to reaffirm their identity. While I expect behavioral residue and identity claims to be present on personal computer desktops, I predict observers will only be able to detect global personality traits that were overwhelmingly found in previous personality perception research (e.g., openness, consciousness, and

extraversion; Gosling, Ko, Mannarelli & Morris, 2002). I expect this because a personal computer desktop is a cue restricted environment which limits personality perception. Past research has demonstrated an abundance in cues is crucial because it increases the probability for observer agreement (Gosling, Ko, Mannarelli & Morris, 2002). Furthermore, the greater the number of available cues, the more valid cues there are that correlate with a specific trait that observers can use to perceive personality (Borkenau & Liebler, 1992). Lastly, more cues permit observers to find more behavioral consistencies (e.g., behaviors associated with cues) which support judgements of personality (Funder & Colvin, 1991). If observers were able to detect personality traits from a personal computer desktop, it suggests that digital personality perception is possible in cue restricted environments.

Method

Participants

Participants were students recruited from introductory psychology courses at a small midwestern university who received partial course credit for their participation. Of the total 348 participants who participated, 210 participants were removed due to missing self-reported personality data without a corresponding personal computer desktop picture or vice versa. These losses occurred due to data loss during lab computer replacements. A total of 138 participants (70 men, 68 women) participated in Phase 1, and a total of three coders (1 man, 2 women) in Phase 2. Participants' ages ranged from 17-37 (M=18, SD=2.52). Participants ethnicity was self-reported: 105 (76%) were Caucasian, 11 (8%) were African American, 1 (0.7%) were Hispanic, and 21 (15%) identified as Other.

Design

The study was conducted in two phases. During Phase 1, participants reported their personality and allowed photos to be taken of the desktops of their personal computers. During Phase 2, coders rated the participants' desktop photos on the same dependent measures. All measures were taken by participants and coders, but the instructions differed.

Procedure

Phase 1. Upon arrival to the research lab, participants' laptops were placed open on a table with their desktop screen visible and participants were seated at individual computer terminals, away from their laptops. To qualify for Phase 1, participants had to own a laptop and bring it to the study. Prior to arriving at the study, participants were not aware a picture of their computer desktop would be taken. Participants without a personal laptop or who brought a laptop that was not their own were not allowed to participate. Participants' then consented to their personal computer desktops being photographed by members of the research team. Following the picture, participants took a series of personality measures.

Phase 2. After Phase 1 was completed, three trained research assistants were instructed to rate participants' desktops on the same personality measures that the participants used in Phase 1. Coders rated the desktop pictures using the same scales but, were instructed choose answers on what they thought the desktop owner's personality was based on the picture of their computer desktop. Moreover, coders were aware they were attempting to judge the desktop owner's personality but were unaware of the desktop owners' self-ratings ensuring the coding was objective. Each coder was sent an excel file containing the scale questions and a file containing all the desktop pictures with corresponding participant numbers. The coders rated desktops pictures individually on three separate computers. To conceal the participant's identity, any information on the desktop photo that revealed the desktop owner's identity was anonymized.

Each coder had access to all participants' desktop pictures and definitions of each dependent measure.

Coder Reliability. Once all three coders' ratings were completed, they were averaged for each dependent variable. Coders who exceeded one standard deviation above or below the average for each trait were not included in the final averaged trait measures that were correlated with participants self-ratings. Nine of the eleven coder trait averages contained all three coders. There was never a time in which more than one coder exceeded one standard deviation above or below the mean. The selected coders scores were then used to calculate a total scale score for the given dependent variable to be correlated with the participants' total scale score from their self-reports.

Dependent Measures

Narcissistic Personality Inventory. To measure participants' level of narcissism they completed a 40-item Narcissistic Personality Inventory questionnaire (NPI; Raskin & Terry, 1988) that asked participants a question with an "A" or "B" answer, one a narcissistic statement (e.g., I have a natural talent for influencing people) and the other a non-narcissistic statement (e.g., I am not good at influencing people). Narcissistic statements displayed an excessive amount of interest in oneself, while non-narcissistic statements do not. Higher numbers indicated increased narcissistic level (α=.862).

Narcissistic Grandiosity Scale. To assess specific types of narcissism, participants completed a 16-item Narcissistic Grandiosity Scale questionnaire (NaGS; Rosenthal, Hooley, & Steshenko, 2007). Participants rated 16 vain words (e.g., Perfect, Omnipotent, Brilliant) on a 7-point scale ranging from 1 (*Not at all*) to 7 (*Extremely*) and indicate to what extent each word

describes the desktop owner. Higher numbers indicated increased narcissistic characteristics (α=.948).

Psychological Entitlement Scale. In order to evaluate the extent to which participants' felt entitled, they rated their level of entitlement in a nine-item questionnaire (PES; Campbell, Bonacci, Shelton, Exline, & Bushman, 2004). Sample items read, "People like me deserve an extra break now and then", and "If I were on the Titanic, I would deserve to be on the first lifeboat!" Participants rate these statements a 7-point scale, ranging from 1 (*Strong Disagreement*) to 9 (*Strong Agreement*). Higher numbers indicated increased feeling of self-entitlement (α=.858).

Interpersonal Exploitativeness Scale. With the goal to measure participants' motivation to exploit others, participants completed a 10-item Interpersonal Explotativeness questionnaire (IES; Davis et al., 2010). Sample items read, "I'm perfectly willing to profit at the expense of others.", and "I don't take advantage of others." The items were rated on a 7-point scale, from 1 (*Strong Disagreement*) to 7 (*Strong Agreement*). Higher numbers indicated a higher likelihood to exploit other people (α=.708).

Big Five Inventory. To assess the personality characteristics of participants, they completed the Big Five Personality Inventory questionnaire (BFI; John, Naumann, & Soto, 2008). Participants rated 44 statements on the extent to which the statements described them on a 5-point scale, from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*). Some example items are, "is talkative" (extraversion), "has a forgiving nature" (agreeableness), "makes plans and follows through with them" (conscientiousness), "worries a lot" (neuroticism), and "has an active imagination" (openness). Higher numbers indicated increased agreement on the personality

characteristic; extraversion (α=.873), agreeableness (*a*=.742), conscientiousness (*a*=.598), neuroticism (*a*=.802), openness (*a*=.776).

Rosenberg Self-Esteem Scale. Participants completed a nine-item Rosenberg Self-Esteem Scale to measure their level of self-esteem (Rosenberg; Rosenberg, 1965). Sample items read, "I certainly feel useless at times.", and "I feel that I'm a person of worth, at least on an equal basis with others." Each a statement on worth, rated on a 5-point scale, from 1 (*Strong Disagreement*) to 9 (*Strong Agreement*). Higher numbers indicated higher self-esteem (α=.866).

Preference for Consistency Scale. To assess diligence in consistency, participants completed an 18-item Preference for Consistency questionnaire (PFC; Cialdini, Trost, & Newsome, 1995). Sample items read, "It is important to me that my actions are consistent with my beliefs.", and "I want my close friends to be predictable." Each a statement of consistency was rated on a 9-point scale, from 1 (*Strongly Disagreement*) to 9 (*Strongly Agreement*). Higher numbers indicated a higher quality of consistency (α=.847).

Demographic Questionnaire. Participants completed a four-item demographic questionnaire that included questions regarding their gender, age, race, and current academic year. Additionally, participants reported on their computer ownership and use (these data were not analyzed for this thesis).

Results

Big Five Personality Inventory

I expected to find a positive correlation between participants' and coders' ratings on global personality traits (i.e., the Big 5). Unfortunately, there was no significant positive correlation among the participants' and coders' ratings of extraversion, $r(137) = -.015$, $p = .861$, openness, $r(137) = -.060$, $p = .483$, agreeableness, $r(137) = -.049$, $p = .570$, and neuroticism,

$r(137) = .029$, $p = .734$. There was a significant negative correlation of conscientiousness [$r(137) = -.214$, $p = .012$], indicating that as coders' perceived higher levels of conscientiousness, participants' reported lower levels of conscientiousness.

Specific Personality Traits

Similarly, no significant positive correlation emerged from more specific trait measures (i.e., personality traits that may be more subtle to detect). Specifically, no significant correlations emerged between participants' and coders' self-esteem, $r(137) = -.027$, $p = .751$, entitlement, $r(137) = -.119$, $p = .164$, exploitativeness, $r(137) = -.072$, $p = .403$, narcissistic personality, $r(137) = -.092$, $p = .283$, consistency, $r(137) = .035$, $p = .681$, and narcissistic grandiosity, $r(137) = -.116$, $p = .175$. Collectively, these results indicate that coders were unable to make accurate personality judgement by using the cues on the participants' personal computer desktops.

Discussion

As personality cues continue to ornament the physical and digital environments people inhabit, it is important to understand the extent to which these personality cues are perceivable on digital environments. For example, typical personality measures are long and require the participation of the target. Perceiving one's personality from their digital environments does not require the participation of the target and are, in many cases, freely available (e.g., public twitter profiles). The current study was one of the first explorations of personality expression on a digital domain with as few cues as a personal computer desktop.

I began with the fundamental question: To what extent are personality cues perceivable on digital environments? I examined if personality expression on personal computer desktops was detectable by objective observers. The results did not support my hypothesis that participants' personalities can be inferred using cues from peoples' computer desktops. The

results are not congruent with previous person perception work in physical and digital domains (Vazire, & Gosling, 2004). Participants' personality was not able to be perceived by coders who only viewed the participants' personal computer desktops. This was true on all traits that were measured with the exception of conscientiousness, which was negatively correlated, indicating that as participants self-reported more conscientiousness, coders reported less. There are a few explanations that could be responsible for these findings.

Limitations

Personal computer desktops are more restricted than previous digital environments used in person perception research. Thus, it may be that personality traits are not able to be detected on digital domains such as personal computer desktop due to a paucity of meaningful cues. Previous research has shown that personality is perceptible on digital domains such as personal websites (Vazire, & Gosling, 2004). However, personal websites contain a wealth of identity claims (Vazire, & Gosling, 2004). A plausible explanation for the current study's inability to perceive personality expression on personal computer desktops is that the context and way in which behavioral residue and identity claims are made may be qualitatively and quantitively different between distinct digital domains. Personal computer desktops may leave dissimilar amounts of behavioral residue and identity claims compared to other than other digital environments such as social networking sites and personal websites. Other-directed identity claims may not be present and behavioral residue may be scarce on a personal computer desktop. Therefore, this may lead to fewer available cues of which a small subset are likely to be valid personality indicators. Thus, this study may have identified a boundary condition in digital person perception.

Secondly, it's noteworthy to state that personal websites are intrinsically designed to be viewed by others on the internet. Personal computer desktops are not. This may lead to an overall decrease in cues that is marked by a specific deficit in other directed identity claims as it is likely that most users believe they will be the primary viewers of their desktop computer screen. The belief that desktop owners are the primary viewers of their desktop screens matters because it likely means there is little motivation to provide other-directed identity claims that are more likely to be present on personal websites and other public media. People who have public media have a conceptual understanding that the internet is observable by others. This may prime public media owners to construct their public media around a public image. As a result, other-directed identity claims will be present on one's public media. What's more, other-directed identity claims are inherently to be viewed by others, so public media owners should mold them so that they are easily understood and perceived by others. A personal computer desktop owner may not feel compelled to make other-directed identity claims about themselves for others to see when they are the primary or sole viewer of their personal computer desktop. Therefore, eliminating other-directed identity claims eliminates the potential for additional personality cues and their perceptibility. While personality may still be perceivable with only behavioral residue present, it may be much more difficult without a large number of identity claims.

Additionally, increased cue availability should lead to increased person perception. Previous research has shown personality traits that had the strongest self-other overlap also provided the most associations with particular cues in the environment (Gosling, Ko, Mannarelli & Morris, 2002). More personality cues induce greater cue trait associations and increases the propensity of observers to use those cues to make personality judgements (Borkenau & Liebler, 1992). Observers scan for behavioral patterns to use as their basis for personality judgements

(Funder & Colvin, 1991) and fewer cues (which is likely the case on personal computer desktops) likely limit these judgments. A digital environment needs a plethora of personality cues for observers to make the correct personality judgements.

It's possible the study didn't utilize enough coders. Although the number of coders and method were similar to existing research (Funder & Sneed, 1993; Gosling, Ko, Mannarelli & Morris, 2002; Vazire & Gosling, 2004; Gosling, Augustine, Vazire, Holtzman & Gaddis, 2011). This suggests that the inability of our coders to perceive the targets personality was not due to a limited number of coders.

A final limitation of this study could be a lack of statistical power to find my effects. In many cases the effect reported by previous research were small to medium (*r*'s < 0.2-0.5) (McLarney-Vesotski, Bernieri & Rempala, 2006; Funder & Sneed,1993). However, my sample size was large given my statistical analysis plan. Thus, it is likely that a lack of statistical power is not a reason for the lack of effects in the current study.

Future Directions

Future research should consider investigating self-other overlap on a more personal device (e.g., a cell phone) that may provide enough of the available cues to accurately perceive one's personality. A more personable device would likely be a digital environment more readily available to the owner. While personal digital environment such as mobile phones will also likely be low on identity claims, there increases in digital occupancy should lead to increased personality cues. That is, the more time one invests in their digital environment the greater frequency of behavioral residue that environment is likely to yield.

Future research should consider investigating digital person perception experimentally. For example, researchers could manipulate the amount and quality of personality cues present in

digital spaces. This work has the potential to identify the mechanisms responsible for digital personality perception.

Implications

This study indicates that there may be limits to digital personality detection. Environments with few identity claims and lower numbers of cues overall (like personal desktops) might be boundary conditions. A personal computer desktop owner may be limited in the amount and type of personality cues they can leave on a personal computer desktop. Without an adequate volume of personality cues available, observers may not have enough information to making meaningful personality judgements. What's more, a personal computer desktop may be an impoverished environment within which people leave personality cues. That is, personality expression on computer desktops may limited, not by the individual, but instead by limitations enforced by the digital environment. However, given the proliferation of highly interactive personal media such as social media sites and mobile phones, researchers are likely to find success in other areas were cues are plentiful.

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